



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,370	02/28/2006	Graham Bank	085874-0453	2207

22428 7590 08/04/2008  
FOLEY AND LARDNER LLP  
SUITE 500  
3000 K STREET NW  
WASHINGTON, DC 20007

EXAMINER
----------

ENSEY, BRIAN

ART UNIT	PAPER NUMBER
----------	--------------

2615

MAIL DATE	DELIVERY MODE
-----------	---------------

08/04/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/565,370	<b>Applicant(s)</b> BANK ET AL.	
	<b>Examiner</b> Brian Ensey	<b>Art Unit</b> 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2-12,14-16 is/are rejected.
- 7) ☒ Claim(s) 13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/23/06</u>   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Specification***

The disclosure is objected to because of the following informalities: Applicant should be consistent in naming element 24. See page 9, lines 10 and 11 “frequency responses 22, 24” in reference to figure 3 and line 19 “directivity 24, 26” in reference to figures 4a-4c.

Appropriate correction is required.

### ***Claim Warning***

Applicant is advised that should claim 15 be found allowable, claim 7 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 4 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which

Art Unit: 2615

it is most nearly connected, to make and/or use the invention. Claim 4 states "the coupling of the vibration exciting means to the panel is longer than the wavelength of sound in air at the lowest required frequency." The Examiner submits that the vibration exciting means is described in the disclosure as a line of discrete exciters attached to a flat panel used to generate an acoustic output through bending wave vibrations of the panel. The Examiner fails to understand or find in the disclosure how the coupling of the exciters to the panel is a function of the wavelength and how the coupling to the panel of the vibration exciting means " is longer than the wavelength of sound in air at the lowest required frequency."

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 3-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bank et al. U.S. Patent No. 6,456, 723 in view of Bank WO 00/33612.

Regarding claim 1, Bank discloses a bending wave loudspeaker having an operating frequency range and a coincidence frequency which is above the operating frequency range, comprising a resonant panel having a main or major axis and a cross or minor axis and an aspect ratio of at least 2:1, vibration exciting means coupled to the panel to excite the panel into

Art Unit: 2615

resonance along a first axis of the panel, and means restraining or preventing resonance along the second perpendicular axis of the panel whereby the panel radiates an acoustic output which is of wide directivity along the first axis and of narrow directivity along the second axis of the panel (See Fig. 1 and col. 3, line 38 to col. 4, line 33). Bank does not expressly disclose vibration exciting means coupled to the panel to excite the panel into resonance along the cross or minor axis of the panel, and means restraining or preventing resonance along the main or major axis of the panel whereby the panel radiates an acoustic output which is of wide directivity along the cross or minor axis and of narrow directivity along the main or major axis of the panel. However, this may be accomplished simply by rotating the vibrating exciting means to the major axis and Bank ('612) teaches vibration means (13, 15) mounted along the major axis (35) of the panel (11) to excite the panel along the major axis (See Fig. 1 and page 14, line 25 to page 15, line 15). Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention to place the vibration means along the axis upon which the narrow sound focus is desired and thereby producing a wide focus to it perpendicular axis.

Regarding claim 3, the combination of Bank ('723) in view of Bank ('612) further discloses the vibration exciting means forms the means restraining or preventing resonance along the main or major axis (See Bank '612, page 3, line 23 to page 4, line 2 and page 5, lines 9-22).

Regarding claim 5, the combination of Bank ('723) in view of Bank ('612) further discloses the vibration exciting means comprises a line of discrete exciters extending along the main or major axis and operated substantially in phase (See Bank '612 Fig. 1, page 3, line 23 to page 4, line 2 and Bank '723 Fig. 1 ).

Regarding claim 6, the combination of Bank ('723) in view of Bank ('612) further discloses the spacing between the exciters is not substantially greater than half the wavelength in the panel at the highest operating frequency (See Bank '612, page 3, lines 16-19).

Regarding claims 7 and 15, the combination of Bank ('723) in view of Bank ('612) further discloses the line is rectilinear (See Bank '723, Fig. 1)

Regarding claim 8, the combination of Bank ('723) in view of Bank ('612) further discloses the line extends substantially from one end of the panel to the other end (See Bank '723 Fig. 1).

Regarding claim 9, the combination of Bank ('723) in view of Bank ('612) further discloses there are at least four exciters in the line (See Bank '723 Fig. 1).

Regarding claims 10 and 11, the combination of Bank ('723) in view of Bank ('612) further discloses the line of exciters is to one side of the median longitudinal axis of the panel and the line is on the nodal line of the first lateral bending mode (See Bank '723 Fig. 1 and col. 2, lines 54-64).

Regarding claim 12, the combination of Bank ('723) in view of Bank ('612) further discloses the exciters are equally spaced along the line (See Bank '723, Fig. 1).

Regarding claims 14 and 16, the combination of Bank ('723) in view of Bank ('612) further discloses the panel is rectangular (See Bank '723, Figure 1)

***Allowable Subject Matter***

Claim 13 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Ensey whose telephone number is 571-272-7496. The examiner can normally be reached on Monday - Friday 6:00 AM - 2:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Suhan Ni can be reached on 571-272-7505. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
P.O. Box 1450  
Alexandria, Va. 22313-1450

**Or faxed to:**

(571) 273-8300, for formal communications intended for entry and for informal or draft communications, please label "PROPOSED" or "DRAFT".  
Hand-delivered responses should be brought to:

Customer Service Window  
Randolph Building  
401 Dulany Street  
Arlington, VA 22314

Art Unit: 2615

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Brian Ensey/  
Primary Examiner, Art Unit 2615  
August 1, 2008